



UNITED STATES PATENT AND TRADEMARK OFFICE

HL

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/061,377	02/01/2002	Thomas D. Schneider	4239-62014	2399
36218	7590	10/20/2004	EXAMINER	
KLARQUIST SPARKMAN, LLP 121 S.W. SALMON STREET, SUITE #1600 ONE WORLD TRADE CENTER PORTLAND, OR 97204-2988			MARSCHER, ARDIN H	
			ART UNIT	PAPER NUMBER
			1631	

DATE MAILED: 10/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/061,377

Applicant(s)

SCHNEIDER ET AL.

Examiner

Ardin Marschel

Art Unit

1631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-82 is/are pending in the application.
- 4a) Of the above claim(s) 3-7, 11, 12, 14, 15, 19-39, 46-53, & 57-82 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 8-10, 13, 16-18, 40-45 and 54-56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-82 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date (1 sheet).
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 1631

DETAILED ACTION

Applicant's election of species A (motor contains a simple cylinder shape), L (arrays are not nested), and N (lacking coating limitations) in the reply filed on 7/29/04 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Claims 1, 2, 8-10, 13, 16-18, 40-45, and 54-56 are under examination as reasonably deemed to read on the elected species which adds a few claims over those listed by applicants in their response, filed 7/29/04.

VAGUENESS AND INDEFINITENESS

Claims 1, 2, 8-10, 13, 16-18, 40-45, and 54-56 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Various claims cite cylindrical motor arrangements as elected as specie A. A cylinder appears to be a 3-dimensional shape. Thus, the two dimensional array limitations in the instant claims such as claim 1 conflict with the 3-dimensional shape of a cylinder thus making the claims vague and indefinite as to this conflict in metes and bounds. This unclarity also is present in independent claims 44 and 54. Clarification via clearer claim wording is requested. Claims which depend directly or indirectly from claims 1, 44, or 54 also are rejected hereinunder due to their dependencies causing inclusion of the above unclarity.

In claim 1, line 1, the word "rotary" is cited regarding the claimed motor. Confusingly, none of the limitations that define the actual parts of the motor in lines 2-6

Art Unit: 1631

require or cite any rotary motion directed elements. For example, in the last line of claim 1 the interaction of arrays apparently broadly produces a "move" of the second array relative to the first array. The limitation "move" lacks any clear antecedent basis when compared to "rotary" in line 1. Thus, claim 1 is vague and indefinite as to whether the preamble line 1 rotary wording controls the metes and bounds of the claim or the actual motor component limitations in lines 2-6. Clarification via clearer claim wording is requested. Claims which depend directly or indirectly from claim 1 also are rejected hereinunder due to their dependencies causing inclusion of the above unclarity.

In claim 1, line 1, the word "molecular" is cited regarding the claimed motor. Confusingly, none of the limitations that define the actual parts of the motor in lines 2-6 require or cite any generic "molecular" elements. For example, in line 2 of claim 1 the citation of a "motor protein" indicates that a protein molecule is present but "protein" is much more limited than denoted by the word "molecule". It, however, is acknowledged that a protein is generally viewed as a limited type of molecule. Additionally, the word "molecule" in line 1 of pending claims may indicate that the motor is made up of molecules potentially lacking materials which are made up of atoms and thus are elemental in nature, such as a pure metallic material, which most commonly is a mixture of atoms and not molecular in its chemical nature. Thus, claim 1 is vague and indefinite as to whether the preamble line 1 molecule wording controls the metes and bounds of the claim or the actual motor component limitations in lines 2-6. An equivalent unclarity regarding metes and bounds is present in independent claims 44 and 54. Clarification via clearer claim wording is requested. Claims which depend directly or indirectly from

Art Unit: 1631

claims 1, 44, or 54 also are rejected hereinunder due to their dependencies causing inclusion of the above unclarity.

PRIOR ART

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 9, 10, 13, 17, 18, 40, 41, 43, 44, and 54 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Thomas et al. [J. Phys. D: Appl. Phys. 31:253 (1998)].

On page 256 cylindrical portions of a microtubule as disclosed as moving relative to each other via arrays of protein interacting as depicted in Figure 4 and described in section "2.2. The kinesin-tubulin and dynein-tubulin molecular motors". These motors anticipate the above listed instant claims as moving via interacting protein arrays to result in movement as instantly claimed therein described as the beating of cilia and flagella. The above unclarity regarding the metes and bounds of the claims also supports this rejection as the reference describes protein array interaction resulting in movement but that instant claim 1 is not clearly limited to rotary movement as described above. Instant claims 9, 40, 41, and 43 are anticipated due to the presence of ATP as a driving material as disclosed in said Thomas et al. citation which also is regulated via cellular processes. The ATP must necessarily travel into the motor via some type of permeation/perforations in order to interact with the motor proteins as in the reference

Art Unit: 1631

as also claimed in instant claims 10 and 54. Instant claims 17 and 18 are included as natural preselection is reasonably interpreted as genetically controlled in the living cells cited in the reference.

NON-STATUTORY SUBJECT MATTER

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1, 2, 9, 10, 13, 17, 18, 40, 41, 43, 44, and 54 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The molecular motors as described above in Thomas et al. are disclosed in said reference as being motors within living cells and thus are non-statutory as being directed to a product of nature.

No claim is allowed.

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the Central PTO Fax Center. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993)(See 37 CFR § 1.6(d)). The Central PTO Fax Center number is (703) 872-9306.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ardin Marschel, Ph.D., whose telephone number is (571) 272-0718. The examiner can normally be reached on Monday-Friday from 8 A.M. to 4 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward, Ph.D., can be reached on (571) 272-0722.

Any inquiry of a general nature or relating to the status of this application should be directed to Legal Instrument Examiner, Tina Plunkett, whose telephone number is (571) 272-0549.

Art Unit: 1631

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

October 15, 2004

Ardin H. Marschel 10/15/04
ARDIN H. MARSCHEL
PRIMARY EXAMINER